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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,209	06/22/2001	Yuko Tachibana	209663USPCT	6187

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EXAMINER	
PIZIALI, ANDREW T	

ART UNIT	PAPER NUMBER
1775	

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

A8-17

Office Action Summary	Application N .	Applicant(s)	
	09/857,209	TACHIBANA ET AL.	
	Examiner	Art Unit	
	Andrew T Piziali	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,4,6-9 and 11-30* is/are pending in the application.

4a) Of the above claim(s) *19-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,4,6-9,11-18 and 22-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

Group I

Species 1, drawn to a laminate comprising at least one oxide interlayer.

Sub-Species A, drawn to a laminate comprising at least one NbO_x interlayer.

Sub-Species B, drawn to a laminate comprising at least one GZO interlayer.

Sub-Species C, drawn to a laminate comprising at least one ITO interlayer.

Sub-Species D, drawn to a laminate comprising at least one oxynitride interlayer.

Species 2, drawn to a laminate comprising at least one nitride interlayer.

Sub-Species A, drawn to a laminate comprising at least one nitride of silicon interlayer.

Sub-Species B, drawn to a laminate comprising at least one nitride of boron (boride) interlayer.

Sub-Species C, drawn to a laminate comprising at least one nitride of aluminum interlayer.

Sub-Species D, drawn to a laminate comprising at least one oxynitride interlayer.

Species 3, drawn to a laminate comprising at least one carbide interlayer.

Group II

Species 1, drawn to a laminate comprising at least one Ag-Pd alloy metal layer.

Species 2, drawn to a laminate comprising at least one Ag-Au alloy metal layer.

Species 3, drawn to a laminate comprising at least one Ag-Pd-Cu alloy metal layer.

2. Applicant is required, in reply to this action, to elect a single species from each Group (I and II) and in the event that Species 1 or Species 2 is chosen from Group I the applicant is required to elect a single Sub-Species (A, B, C, or D) to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

3. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

4. The claims deemed to correspond to the species listed above are: Claims 2, 4, 6-9, 11-18 and 22-30. Claims 19-21 are withdrawn from consideration.

5. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical feature for the following reason: In the amendment filed 7/24/2003 the applicant showed that at least one Markush alternative is not novel over the prior art by amending the Markush Group to overcome the prior art teaching of a laminate comprising an interlayer of silicon oxide or aluminum oxide. MPEP 1850(D) states "When dealing with alternatives, if it can be shown that at least one Markush alternative is not novel over the prior art, the question of unity of invention shall be reconsidered by the examiner." Therefore, upon reconsideration, it is the position of the examiner that since at least one alternative is not novel over the prior art the species lack the same or corresponding special technical feature.

6. During a telephone conversation with Harris Pitlick on 8/20/2003 a provisional election was made with traverse to prosecute the invention of Group I, Species 2, Sub-Species A and Group II, Species 1. Affirmation of this election must be made by applicant in replying to this Office action. Claims not directed the elected species are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 17-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. In claim 17, it is not clear what the "x" represents in SiN_x or NbO_x.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 2, 4, 6-9 and 11-13, 15-18 and 23-30 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,045,896 to Boire et al. (hereinafter referred to as Boire).

Regarding claims 2, 4, 6-9 and 11-13, 15-18 and 23-30, Boire discloses a laminate comprising a substrate (1), a dielectric oxide layer (2a), a first stabilizing zinc oxide layer (2b), a first silver layer (3), a first barrier layer (5a), a second stabilizing zinc oxide layer (5b), a second silver layer (6), an absorbing layer (8a), and a second barrier layer (8b) (see entire document including Figure 1).

Boire discloses that a barrier layer may be placed under one or more of the silver layers for maximum safety but further discloses that the stabilizing layers should remain in contact with the silver layers (column 4, lines 1-15 and lines 25-34). Boire also discloses that the dielectric oxide layer may be a titanium dioxide layer and the barrier layers may comprise a single layer of silicon nitride or a multilayer of silicon nitride surmounted by a layer of titanium dioxide (column 5, lines 27-31 and column 7, lines 19-27). Therefore, Boire discloses a laminate comprising a substrate (1), a dielectric oxide

layer comprising titanium dioxide (2a), a first barrier layer comprising silicon nitride, a first stabilizing zinc oxide layer (2b), a first silver layer (3), a second barrier layer comprising a layer of silicon nitride surmounted by a layer of titanium dioxide (5a), a second stabilizing zinc oxide layer (5b), a second silver layer (6), an absorbing layer (8a), and a third barrier layer comprising a layer of silicon nitride surmounted by a layer of titanium dioxide (8b).

Regarding claims 2 and 23, Boire does not mention the specific refractive index of titanium dioxide layers, but considering that the applicant's specification discloses that titanium oxide alone (titanium dioxide) may be used for the titanium oxide layers (page 10, lines 7-14), the titanium dioxide layers of Boire appear to possess a refractive index of at least 2.4 at a wavelength of 550nm.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Regarding claims 4 and 25, Boire discloses that the thickness of the silicon nitride barrier layers may be from 0.1 to 30 nm (column 5, lines 38-41 and column 7, lines 19-52).

Regarding claims 6, 9, 27 and 30, Boire does not give the specific sheet resistance value, visible light transmittance and the visible light reflectance for every conceivable article structure disclosed by Boire, but considering the substantially identical article disclosed by Boire, compared to applicant's claimed article, it appears that the article disclosed by Boire possesses the claimed properties.

Regarding claims 7 and 28, Boire discloses that the laminate may have a layer of PET laminated thereon (column 8, lines 47-64).

Regarding claims 8 and 29, Boire discloses that the laminate may have a layer of resin having near-infrared shielding properties laminated thereon (column 8, lines 47-64).

Regarding claim 13, Boire discloses that the laminate may contain at least three metal layers (paragraph bridging columns 4 and 5).

11. Claims 7-8 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boire as applied to claims 2, 4, 6-9 and 11-13, 15-18 and 23-30 above, and further in view of USPN 5,723,075 to Hayasaka et al. (hereinafter referred to as Hayasaka).

Hayasaka discloses a resin with a near-infrared absorbent and further discloses that the resin may be deposited on a desired substrate to endow the substrate with a near-infrared absorbing property (column 14, lines 21-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to laminate the glass article of Boire, with a layer of resin with a near-infrared absorbent, as disclosed by Hayasaka, because the resin would endow the substrate with a near-infrared absorbing property which would be desirable in applications requiring low reflectance.

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boire as applied to claims 2, 4, 6-9 and 11-13, 15-18 and 23-30 above, and further in view of USPN 5,595,825 to Guiselin.

Boire does not specifically mention using at least four metal layers, but Guiselin discloses that it is known in the art that increasing the number of metal film layers in a coated article enables the solar protection to be optimized, which in turn results in a reduction of the solar factor of the article (see entire document including column 1, lines 24-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to increase the number of silver layers to at least four silver layers, as disclosed by Guiselin, because increasing the number of metal film layers in a coated article enables the solar protection to be optimized, which in turn results in a reduction of the solar factor of the pane.

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boire as applied to claims 2, 4, 6-9 and 11-13, 15-18 and 23-30 above, and further in view of USPN 4,565,719 to Phillips et al. (hereinafter referred to as Phillips).

Boire does not specifically mention adding palladium to the infrared reflective silver layers, but Phillips discloses that it is known in the art to use at least one infra-red reflecting layer containing Ag as the main component and Pd, wherein the Pd content as Pd/Ag is from 0.3 to 11.1 at %, because the environmental stability and durability of the silver layer increases (see entire document including column 2, lines 3-23 and lines 47-54, column 3, lines 18-59 and column 4, lines 7-24). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the infra-red reflecting silver layers of Boire from Ag and Pd, wherein the Pd content as Pd/Ag is from

0.3 to 11.1 at %, as disclosed by Phillips, because the environmental stability and durability of the silver layers increases.

Response to Arguments

14. Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

15. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (703) 306-0145. The examiner can normally be reached on Monday-Friday (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-3822.

Andrew T Piziali
Examiner
Art Unit 1775

atp
August 21, 2003

DEBORAH JONES
SUPERVISORY PATENT EXAMINER